History of DEC's VK-100 'GIGI' Color graphics terminal with ReGIS Instruction SET

There are several web sites that comment on the utility of DECs VK100, aka the GIGI Terminal. But none gives the big picture of how it came about, design tradeoffs, reception by the Education industry for which it was designed, and the eventual market success. As advance development manager for the GIGI, and product manager for the companion Computer Assisted Instruction (CAI) system, the Digital CAI Authoring Language (DECAL) i would like the tell the story.

When I started working at DEC in 1974 I was a member of a small team of people whose role was to bring DEC's growing family of small computers, including the PDP-8 and PDP-11, and associated peripherals to the education market, specifically K-12 and colleges. DECs larger PDP-10 was sold to education by another group. The group was having success, achieving exceptional sales growth every year, but was positioning the systems for use as an object of instruction and as an administrative machine. PDP-8 and PDP-11s broke ground as time sharing systems, hosting from 4 to 16 users and sold for low teens up to a couple of hundred thousand. Personal computers were a few years in the future. The giant in the market was Control Data with their Plato Instructional System which featured student workstations that had integrated graphics and a sophisticated lesson authoring system called Plato. Plato Systems sold for millions!

The first two years I was there, our focus was to build and bring to market a computer, terminal, and storage system (floppys) packaged in a desk, which we called an EDUsystem. It sold for roughly 30K, if I remember correctly. It took the sale of a couple hundred of these to equal the revenue of one Plato system. Sales of PDP-11 time sharing systems was taking off. But CDC had our attention.

The idea was put on the table, could we shrink the EDUsystem idea and add graphics and storage. At DEC, ideas like this were labeled 'midnight projects'. But they were given support. We took the concept shopping for parts. The first thought was to package it into a VT100. But DECs advanced development group had a better idea. They were developing a smart keyboard. They were also developing a remote graphics instruction set which they called Regis. We went outside the company and sourced a Basic language interpreter from a developer who was just starting out. His name was Bill Gates and he called his company Microsoft. We were among his first customers and maybe even the first. It was that early.

We gave the concept of the device we were developing a code name: SMAKY, for SMart KeYboard. Since it was a keyboard it needed a monitor, a color monotor that accepted separate Red-Green-Blue (RGB) connectors. We OEMed the BARCO monitor.

We gave the SMAKY a 5MB byte floppy for storage. The integrated parts of the SMAKY worked together! But we quickly realized it needed more storage, a LOT more! We changed the idea from a stand alone system (it would have been the first PC) to a Terminal that would connect to and get its software from a DEC time sharing system, which at that time was RSTS/E on PDP-11s.

While the DEC central engineering guys did their magic and turned our breadboard system into a real piece of hardware (the GIGI Terminal we know and love) we turned our attention to the software side, and developed graphics tools and a Computer Aided Instruction system called the Digital Education CAI Authoring Language. DECAL was developed internally. Most of the graphics tools were developed at New York Institute of Technology, under contract to DEC. We also added support for a video disk player and DEC's yet to be announced voice synethesizer. Together it represented a serious competitor to CDC, at a fraction of the cost of their Plato system.

We topped it off with a unique packaging effort that included a box with the picture of the GIGI on it (a first in the industry, and plastic overlays for the keypad for software apps such as a word processor and the CAI language.

The Education group had its own sales force, and they sold it to all sorts of education customers. It was priced more than a VT100, but much less than a Plato system. Some markets quickly embraced it, such as industrial and military training. But K-12 and colleges, which had never been a big customer for Plato was not a big customer for DEC's authoring language either. DEC sold about 50,000 GIGIs over a decade. During this decade the APPLE ONE was launched, as was the IBM PC. The GIGI was not a stand alone system so did not sell into the PC marketplace. Had we productized the SMAKY with its 5MB Floppy with its Basic interpreter it might have been a good alternative to the Apple. But no sense dwelling on that.

I will add one point about the success. Many of you may recognize the name Kemmeny and Kurtz, the Dartmouth College professors who originated the BASIC Language. None other than John Kemmeny said of the GIGI that it was the best computer system he ever ran across to use in teaching of programming in BASIC. An article he published shortly before his death showed Kemmeny sitting at his desk with a GIGI terminal in front of him.

In closing let me say that DEC introduced the GIGI in 1980. Going from a midnight project to prototype and then to a DEC quality product involved a

LOT of people. To give you a sense how many, here's a photo of the team at the introduction:

That's me at the left end of the first row kneeling with my hand raised, and the official product manager, Gary Finerty at kneeling at the right end.   I would like to recognize a few of the team:

Group VP, Joe Meany
Bob Trocchi, EDU Group Manager
Peter Jansen, Marketing Manager
Charlie Rose, Engineering Manager
Documentation manager, Joe Hutchinson
A few of the Engineers: Kevin Carey, Deanna Kemling, Jennifer Lund, Helen Lenart

And many more whose names I can no longer recall. But they were a wonderful group to work with a a true team n every sense of the word.

I want to say a few more words about Peter Jansen. He came to DEC around 1977 with the idea to develop a portable system designed specifically for education, and was the creator of the SMAKY concept. It was his baby from start to finish. My role was to drive the advanced development and then transition to a role as the CAI software manager.

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